ORDER NO.RD7603-1294

Service Manual

Radio

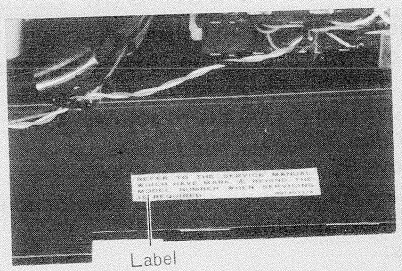
R-5310BⒶ

4-BAND PORTABLE RADIO
WITH CASSETTE TAPE RECORDER

IMPORTANT

There are two different types in model RF-5310B Ⓐ. Identification of diference can be made by **Label** and **Printed Circuit Board,** so please refer to respective Service Manual as below.

Service Monual (Order No.)	R-5310BⒶ (RD7603-1294)	R-5310B (RD7408-1111)
Label Indication	Indicated	Non
Printed Circuit Board No.	RUP721Z	RUP450Z



Label

■ SPECIFICATIONS

Frequency Range:	MW 525~1605kHz (571~187m) SW_1 1.6~4.5MHz (187~66.7m) SW_2 4.5~12 MHz (66.7~25m) SW_3 12 ~26.1MHz (25~11.5m)
Intermediate Frequency:	AM (MW & SW) 455 kHz
Sensitivity:	MW 50 μV/m for 50mW Output SW_1 20 μV/m for 50mW Output SW_2 5 μV for 50mW Output SW_3 5 μV for 50mW Output
Power Output:	4.2W Maximum
Power Source:	AC 115/200/220/240V 50-60Hz or 9V (Six "D" Size Flashlight Batteries) (National UM-1 or equivalent)
Power Consumption:	10 W (AC Only)
Speaker:	16 cm (6½") PM Dynamic Speaker
Dimensions:	320(Wide) x 235(High) x 102(Deep) mm (12 19/32"x9¼"x4")
Weight:	3.6 kg. (7 lb. 15 oz.) without batteries
Impedance:	Speaker.....8Ω Earphone Jack .....8Ω AUX Out Jack.....100kΩ MIC Jack.....10kΩ

Specifications are subject to change without notice for further improvement.

National Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka, Japan

ORDER NO.RD7603-1294

Service Manual

Radio

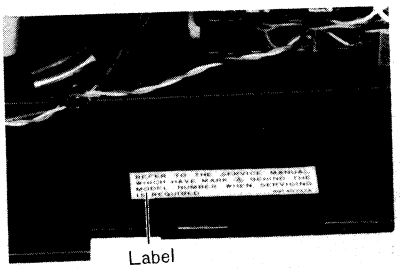
R-5310BⒶ

4-BAND PORTABLE RADIO
WITH CASSETTE TAPE RECORDER

IMPORTANT

There are two different types in model RF-5310B Ⓐ. Identification of diference can be made by **Label** and **Printed Circuit Board,** so please refer to respective Service Manual as below.

Service Monual (Order No.)	R-5310BⒶ (RD7603-1294)	R-5310B (RD7408-1111)
Label Indication	Indicated	Non
Printed Circuit Board No.	RUP721Z	RUP450Z



Label

■ SPECIFICATIONS

Frequency Range:	MW 525~1605kHz (571~187m) SW_1 1.6~4.5MHz (187~66.7m) SW_2 4.5~12 MHz (66.7~25m) SW_3 12 ~26.1MHz (25~11.5m)
Intermediate Frequency:	AM (MW & SW) 455 kHz
Sensitivity:	MW 50 μV/m for 50mW Output SW_1 20 μV/m for 50mW Output SW_2 5 μV for 50mW Output SW_3 5 μV for 50mW Output
Power Output:	4.2W Maximum
Power Source:	AC 115/200/220/240V 50-60Hz or 9V (Six "D" Size Flashlight Batteries) (National UM-1 or equivalent)
Power Consumption:	10 W (AC Only)
Speaker:	16 cm (6 1/2") PM Dynamic Speaker
Dimensions:	320(Wide) x 235(High) x 102(Deep) mm (12 19/32" x 9 1/4" x 4")
Weight:	3.6 kg. (7 lb. 15 oz.) without batteries
Impedance:	Speaker.....8Ω Earphone Jack .....8Ω AUX Out Jack.....100kΩ MIC Jack.....10kΩ

Specifications are subject to change without notice for further improvement.

National Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka, Japan

■ TO REMOVE CHASSIS

1. Remove six (6) control knobs from cabinet.
2. Remove battery cover.
3. Remove four (4) cover screws, nos. 1~4, as illustrated in fig. 1.
4. Remove cabinet cover.
5. Pull out socket of lead wires to cabinet cover.
6. Remove eight (8) red chassis screws, nos. 1~8, as illustrated in fig. 2.
7. Push the eject button.
8. Remove triple indicator.
9. Pull out microphone.
10. To remove chassis completely, unsolder lead wires to speaker terminal.
11. To reassemble, reverse the above procedure.

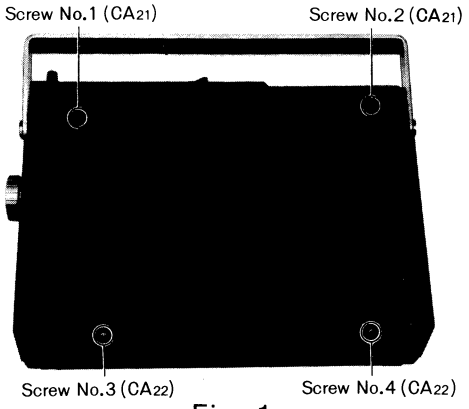


Fig. 1

■ TO REMOVE TAPE DECK

1. Remove chassis from cabinet.(Refer to chassis removal instruction.)
2. Remove three (3) PC Board and tape deck screws, nos. 3, 6 & 7, as illustrated in fig. 3.
3. Remove PC Board from tape deck.
4. To remove tape deck completely, unsolder lead wires, as illustrated in fig. 4.
5. To reassemble, reverse the above procedure.

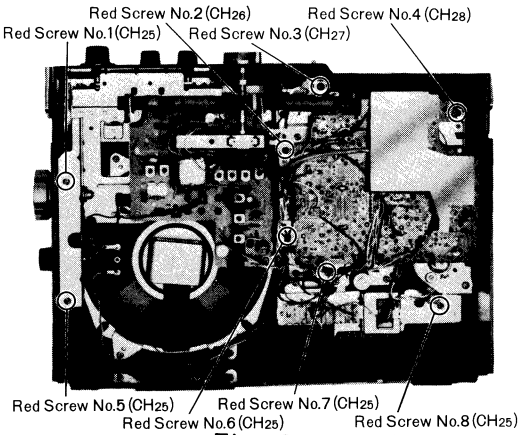


Fig. 2

■ TO REMOVE PC BOARD (RF Circuit)

1. Remove chassis from cabinet.
2. Remove two (2) dial drum and PC Board screws, nos. 1 & 2, as illustrated in fig. 5.
3. Remove four (4) PC Board screws, nos. 1, 2, 4 & 5, as illustrated in fig. 3.
4. Remove PC Board from chassis.
5. To reassemble, reverse the above procedure and read the following notes.

   Notes:

   1. Turn tuning shaft fully clockwise.
   2. Turn tuning capacitor shaft fully clockwise.

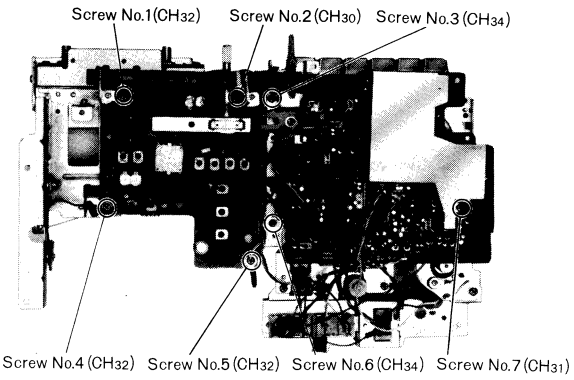


Fig. 3

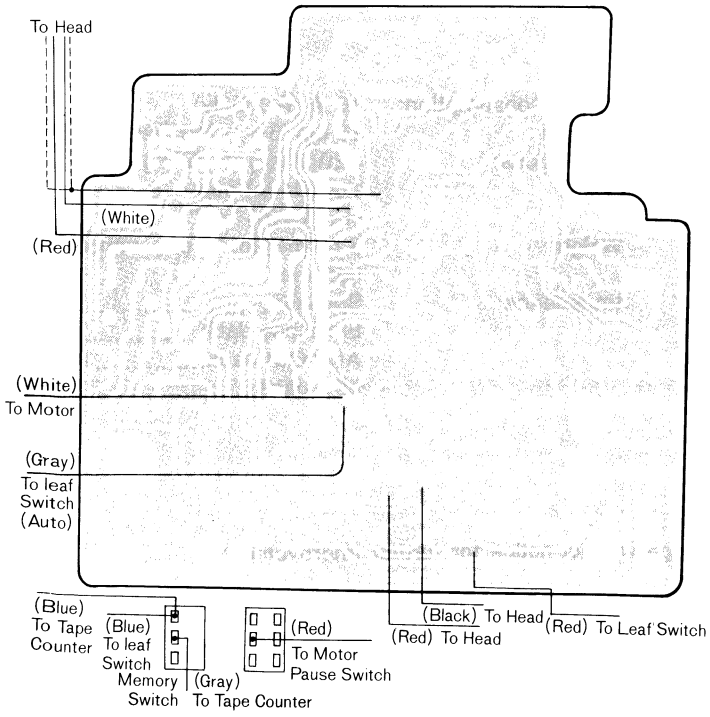


Fig. 4

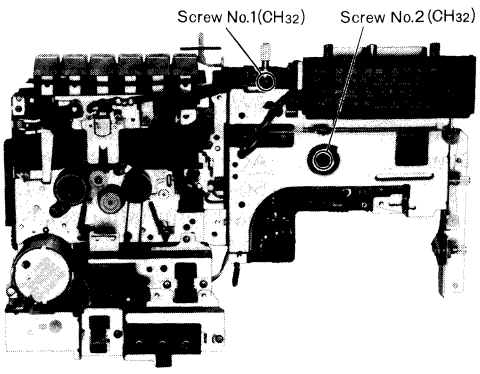


Fig. 5

TO REMOVE CHASSIS

1. Remove six (6) control knobs from cabinet.
2. Remove battery cover.
3. Remove four (4) cover screws, nos. 1~4, as illustrated in fig. 1.
4. Remove cabinet cover.
5. Pull out socket of lead wires to cabinet cover.
6. Remove eight (8) red chassis screws, nos. 1~8, as illustrated in fig. 2.
7. Push the eject button.
8. Remove triple indicator.
9. Pull out microphone.
10. To remove chassis completely, unsolder lead wires to speaker terminal.
11. To reassemble, reverse the above procedure.

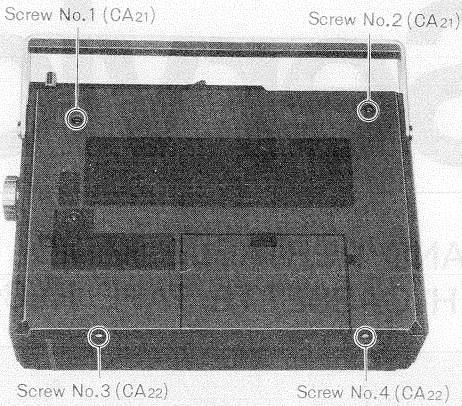


Fig. 1

TO REMOVE TAPE DECK

1. Remove chassis from cabinet.(Refer to chassis removal instruction.)
2. Remove three (3) PC Board and tape deck screws, nos. 3, 6 & 7, as illustrated in fig. 3.
3. Remove PC Board from tape deck.
4. To remove tape deck completely, unsolder lead wires, as illustrated in fig. 4.
5. To reassemble, reverse the above procedure.

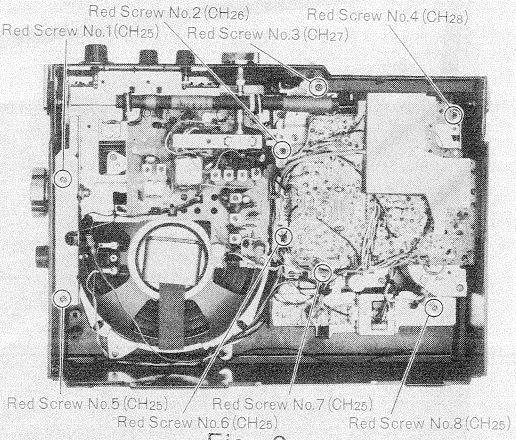


Fig. 2

TO REMOVE PC BOARD (RF Circuit)

1. Remove chassis from cabinet.
2. Remove two (2) dial drum and PC Board screws, nos. 1 & 2, as illustrated in fig. 5.
3. Remove four (4) PC Board screws, nos. 1, 2, 4 & 5, as illustrated in fig. 3.
4. Remove PC Board from chassis.
5. To reassemble, reverse the above procedure and read the following notes.

   Notes:

   1. Turn tuning shaft fully clockwise.
   2. Turn tuning capacitor shaft fully clockwise.

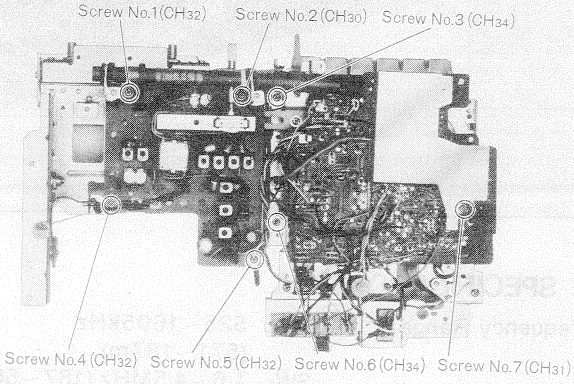


Fig. 3

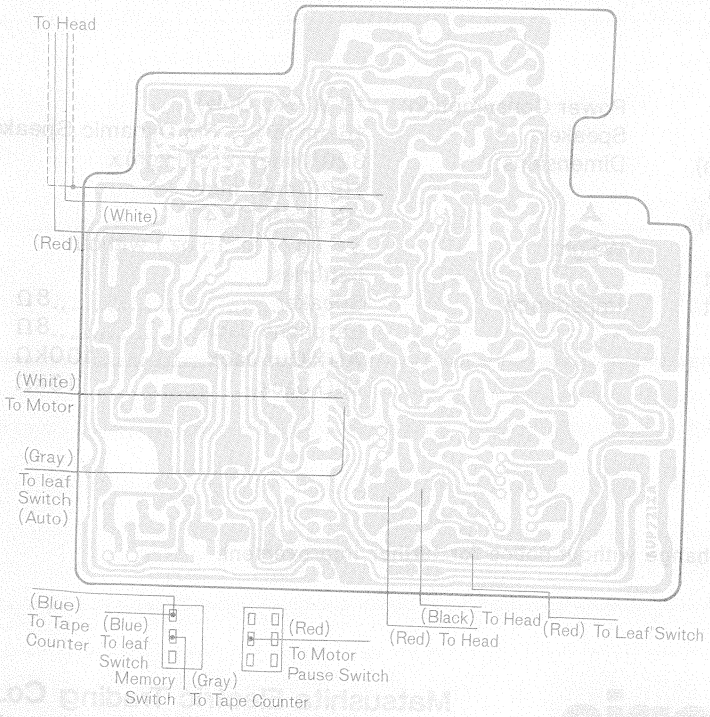


Fig. 4

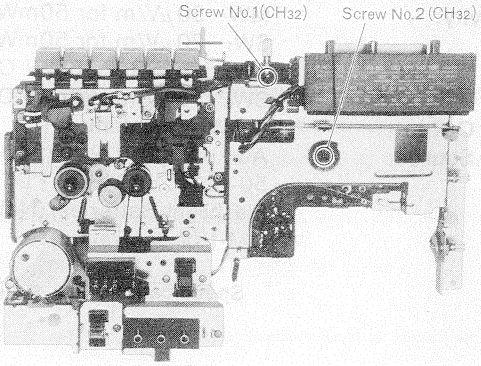


Fig. 5

■ DIAL CORD INSTALLATION GUIDE

1. Remove PC Board (RF Circuit) from chassis.
2. Dial cord length is 80 cm (31 $\frac{1}{2}$")
3. Set dial drum fully counter-clockwise.
4. Arrows (1~7) indicate correct order and direction of dial cord installation.
5. Cement dial cord ends.

■ TO MOUNT DIAL POINTER

1. Set tuning capacitor to maximum capacity.
2. Set dial pointer to start point of dial scale.
3. Attach dial cord to dial pointer.

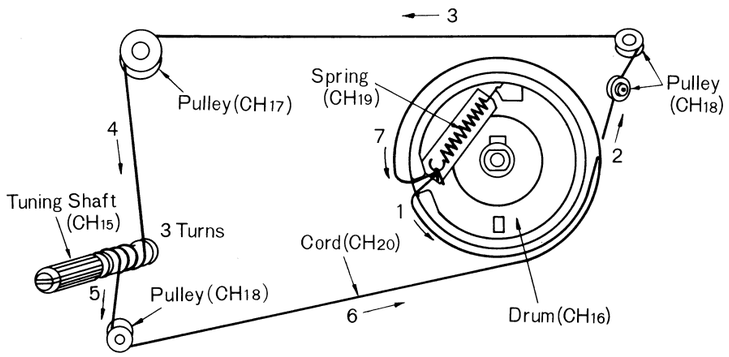


Fig. 6

■ ALIGNMENT POINTS

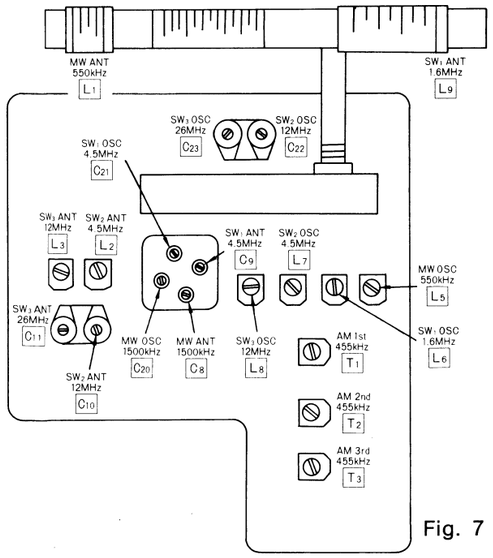
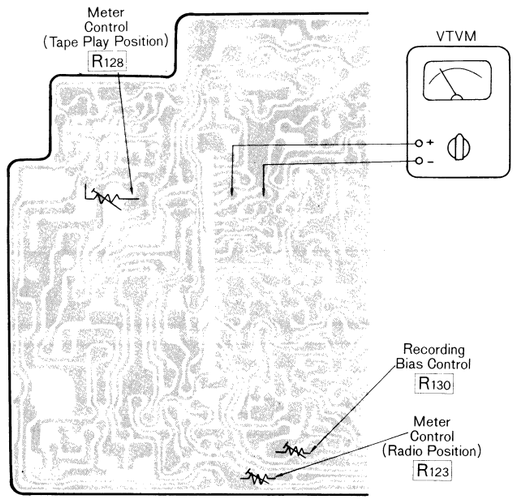


Fig. 7



■ BATTERY/TUNING/RECORDING LEVEL METER ADJUSTMENT

1-1. RADIO RECEIVER SETTING
- Set radio-sleep-tape selector switch to RADIO ON.
- Set volume control to minimum.
- Set power source voltage to 9 volts DC.

1-2. REMARKS
- Adjust R_{123} so that the pointer of level meter stays as shown in fig. 8.

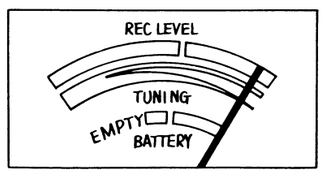


Fig. 8

2-1. RADIO RECEIVER SETTING
- Set radio-sleep-tape selector switch to TAPE.
- Set volume control to minimum.
Set power source voltage to 6.7 volts DC.

2-2. REMARKS
- Adjust R_{128} so that the pointer of lebel meter stays as shown in fig. 9.

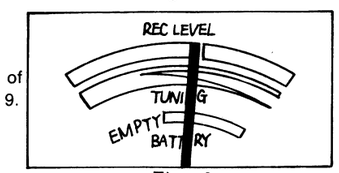


Fig. 9

■ ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

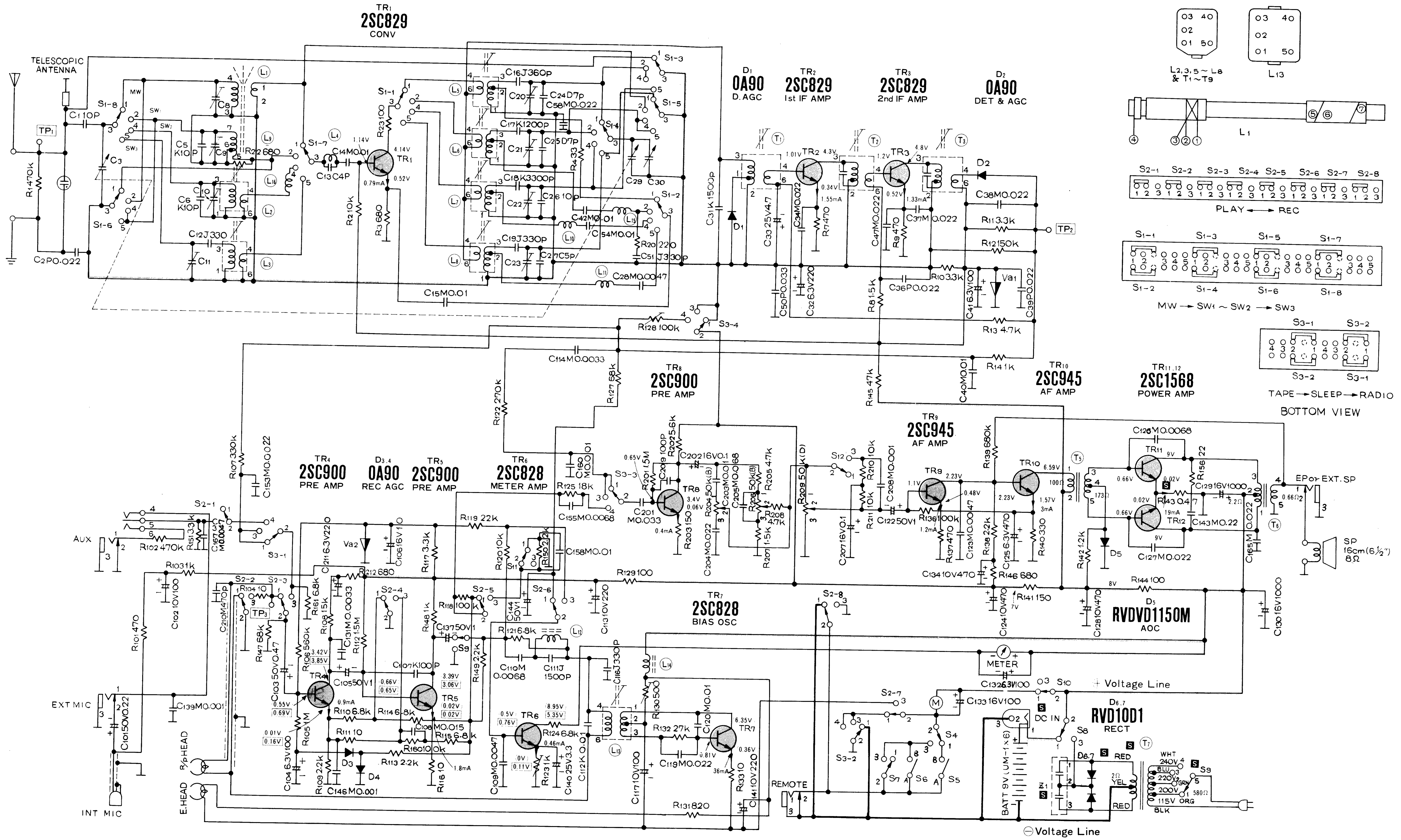
Notes:
1. Set volume control to MAX or MIN (Tape).
2. Set bass & treble control to MAX.
3. Set band selector switch to SW_1, SW_2 or SW_3.
4. Set radio-sleep-tape selector switch to RADIO ON or TAPE (Tape).
5. Set loudness switch to OFF.
6. Set power source voltage to 9 volts DC.
7. Set tape selector switch to recording (Tape).
8. Output of signal generator should be no higher than necessary to obtain an output reading.
9. When aligning, remove whip antenna socket.

	SIGNAL GENERATOR or SWEEP GENERATOR		RADIO DIAL SETTING (DISTANCE)	INDICATOR (VTVM or SCOPE)	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY				
	MW ALIGNMENT					
(1)	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz 30% Mod. with 400 Hz.	Point of non-interference. (on/about 600 kHz)	Output meter across voice coil.	T_1 (1st IFT) T_2 (2nd IFT) T_3 (3rd IFT)	Adjust for maximum output.
(2)	〃	550 kHz	550 kHz (6.08mm ($\frac{1}{4}$"))	〃	L_5 (OSC Coil) (*) L_1 (ANT Coil)	Adjust for maximum output. Adjust L_1 by moving coil bobbin along ferrite core.
(3)	〃	1500 kHz	1500 kHz (57.27mm (2 $\frac{1}{4}$"))	〃	C_{20} (OSC Trimmer) C_8 (ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
	SW_1 ALIGNMENT					
(4)	Connect to point TP1 through 10PF capacitor Common to earth.	1.6 MHz	1.6 MHz (3.01mm ($\frac{1}{8}$"))	〃	L_6 (OSC Coil) (*) L_9 (ANT Coil)	Adjust for maximum output. Adjust L_9 by moving coil bobbin along ferrite core.
(5)	〃	4.5 MHz	4.5 MHz (60mm (2 $\frac{3}{8}$"))	〃	C_{21} (OSC Trimmer) C_9 (ANT Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).
	(*) Cement antenna bobbin with wax after completing alignment.					
	SW_2 ALIGNMENT					
(6)	〃	4.5 MHz	4.5 MHz (3.01mm ($\frac{1}{8}$"))	〃	L_7 (OSC Coil) L_2 (ANT Coil)	Adjust for maximum output.
(7)	〃	12 MHz	12 MHz (60mm (2 $\frac{3}{8}$"))	〃	C_{22} (OSC Trimmer) C_{10} (ANT Trimmer)	Adjust for maximum output. Repeat steps (6) and (7).
	SW_3 ALIGNMENT					
(8)	〃	12 MHz	12 MHz (3.01mm ($\frac{1}{8}$"))	〃	L_8 (OSC Coil) L_3 (ANT Coil)	Adjust for maximum output.
(9)	〃	26 MHz	26 MHz (60mm (2 $\frac{3}{8}$"))	〃	C_{23} (OSC Trimmer) C_{11} (ANT Trimmer)	Adjust for maximum output. Repeat steps (8) and (9).

RECORDING BIAS ALIGNMENT

	CIRCUIT	VTVM CONNECTION	ADJUSTMENT	REMARKS
(10)	RECORDING BIAS	Connect positive side to test point TP3 and negative side to test point E.	R_{130} (Bias Voltage Control)	Adjust R_{130} for 6mV of VTVM reading.

Schematic Diagram – Model R-5310B(A)



C		1 2 3 5 6 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 58 158 25 26 27 54 42 29 30 28 31 51 32 33 34 50 47 36 37 38 39 40 41
		· 101 102 139 153 167 210 103 104 146 105 131 (211) 106 107 137 108 155 109 110 111 144 112 140 113 160 114 209 116 117 201 119 202 120 203 204 205 141 207 (208) 122 134 123 124 132 133 125 128 126 127 129 143 130 165
R		1 22 2 23 3 148 4 20 7 145 8 9 10 11 12 13 14
		101 102 103 151 107 104 147 105 106 161 108 109 110 (212) 111 112 113 114 160 115 116 117 118 119 120 149 150 121 122 123 124 125 127 128 129 130 201 202 131 132 133 203 204 205 206 207 208 209 210 (211) 136 137 138 139 140 141 146 142 144 143 156

Notes:

1. S_{1-1}~S_{1-8}: Band selector switch in "MW" position.
2. S_{2-1}~S_{2-8}: Tape selector switch in "PLAY" position
3. S_{3-1}~S_{3-4}: Radio-Sleep-Tape selector switch in "RADIO" position.
4. S_4: Auto switch in "PLAY" position.
5. S_5: Auto stop switch in "OFF" position.
6. S_6: Memory switch in "OFF" position.
7. S_7: Memory ON-OFF switch in "ON" position.
8. S_8: AC-Battery selector switch in "Battery" position.
9. S_9: Voltage selector switch in "115V" position.
10. S_{10}: Pause switch in "OFF" position.
11. S_{11}: MIC monitor switch in "OFF" position.
12. S_{12}: Loudness switch in "OFF" position.
13. DC voltage measurements are taken with circuit tester 10KΩ/V from negative terminal of battery.
    □... Play back position ( )... Recording position.
14. Battery current: No signal .... 43 mA
    Maximum output .... 680 mA
15. S Indicates that only parts specified by the manufacturer be used for replacement in critical circuits.

Circuit Board Wiring View–Model R-5310B Ⓐ

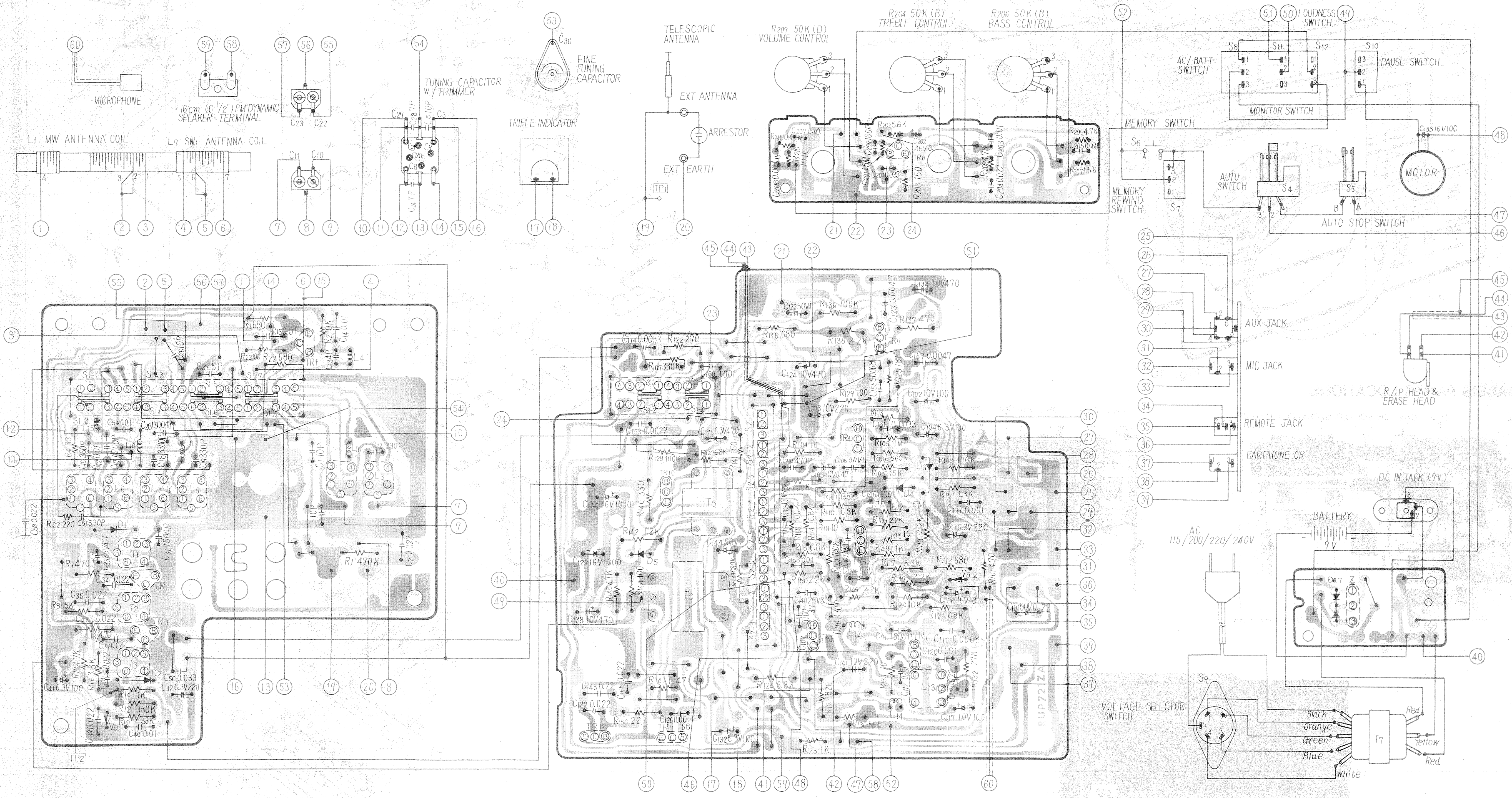
	TR_1	TR_2	TR_3	TR_8	TR_9	TR_{10}	$TR_{11,12}$
C	4.14V	4.3V	4.8V	3.4V	2.23V	6.59V	9 V
B	1.14V	1.01V	1.2V	0.65V	1.1V	2.23V	0.66V
E	0.52V	0.34V	0.52V	0.06V	0.48V	1.57V	0.02V
Ie	0.79mA	1.55mA	1.33mA	0.4mA	1.2mA	3mA	19mA

TR_4	PLAY BACK	RECORDING
C	3.85V	3.42V
B	0.69V	0.55V
E	0.16V	0.01V
Ie	0.9mA	0.9mA

TR_5	PLAY BACK	RECORDING
C	3.06V	3.39V
B	0.65V	0.66V
E	0.02V	0.02V
Ie	1.8mA	1.8mA

TR_6	PLAY BACK	RECORDING
C	5.35V	8.95V
B	0.76V	0.5V
E	0.11V	0 V
Ie	0.46mA	0.46mA

TR_7	RECORDING
C	6.35V
B	0.81V
E	0.36V
Ie	36mA



TR& D	D1 D2 TR2 TR3	TR1	TR12 D5 TR10 TR11	TR6 TR4 TR5 TR8 TR9 D4 TR7 D3	
T& L	L1 L5 L15 L10 L6 T1 T2 T3 L7 L11 L8 L9	L2 L4 L16 L3	T6 T5	L12 L14 L13	T7

⊕ Voltage Line

Circuit Board Wiring View–Model R-5310BⒶ

TR_1	
C	4.14V
B	1.14V
E	0.52V
Ie	0.79mA

TR_2	
C	4.3V
B	1.01V
E	0.34V
Ie	1.55mA

TR_3	
C	4.8V
B	1.2V
E	0.52V
Ie	1.33mA

TR_4	PLAY BACK	RECORDING
C	3.85V	3.42V
B	0.69V	0.55V
E	0.16V	0.01V
Ie	0.9mA	0.9mA

TR_5	PLAY BACK	RECORDING
C	3.06V	3.39V
B	0.65V	0.66V
E	0.02V	0.02V
Ie	1.8mA	1.8mA

TR_6	PLAY BACK	RECORDING
C	5.35V	8.95V
B	0.76V	0.5V
E	0.11V	0V
Ie	0.46mA	0.46mA

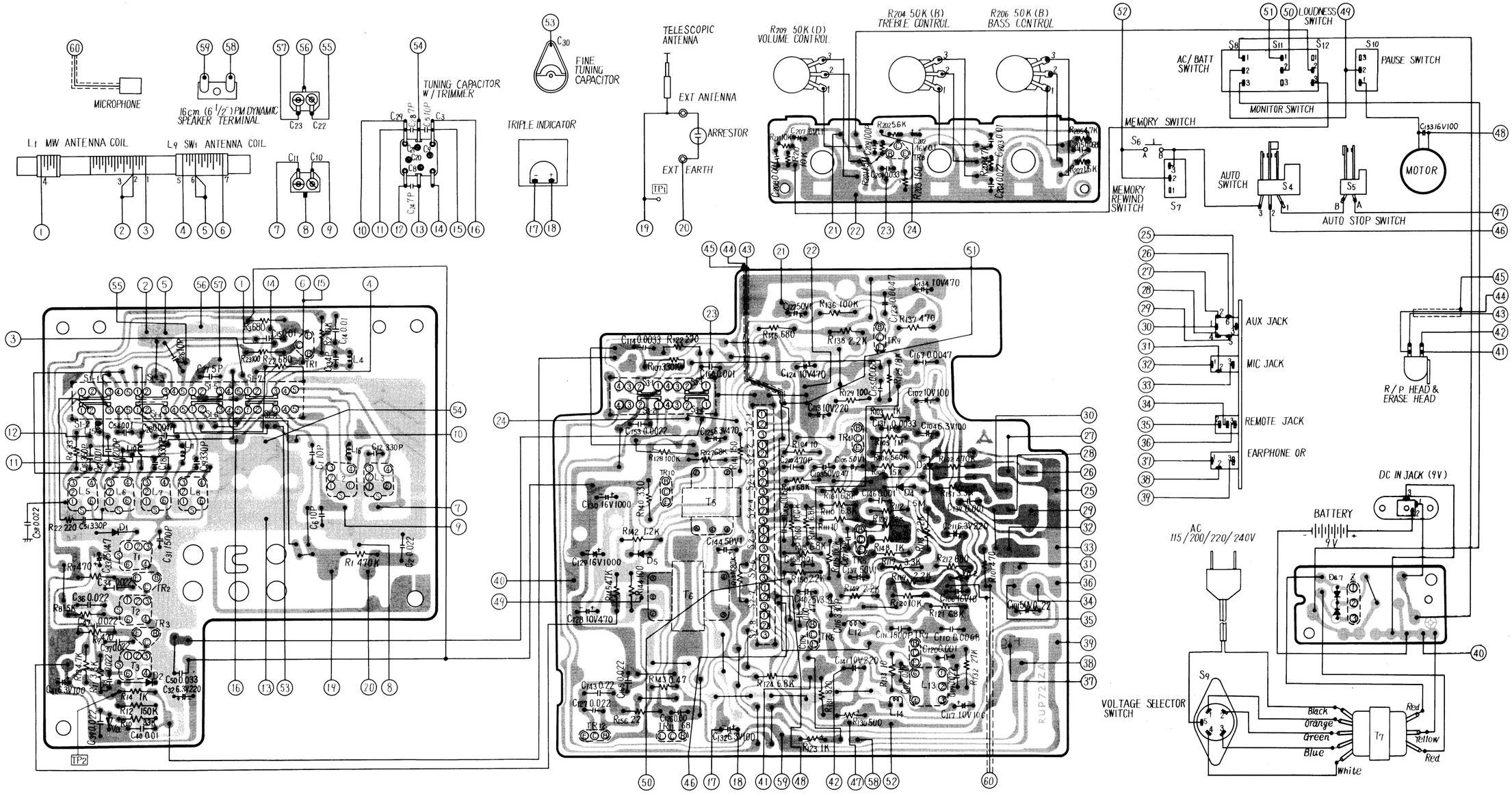
TR_7	RECORDING
C	6.35V
B	0.81V
E	0.36V
Ie	36mA

TR_8	
C	3.4V
B	0.65V
E	0.06V
Ie	0.4mA

TR_9	
C	2.23V
B	1.1V
E	0.48V
Ie	1.2mA

TR_{10}	
C	6.59V
B	2.23V
E	1.57V
Ie	3mA

$TR_{11,12}$	
C	9V
B	0.66V
E	0.02V
Ie	19mA



TR&D	D1 D2 TR2 TR3	TR1	TR12 D5 TR10 TR11	IN.	IR4 IR5 IR8 IR9 D4 IR7 D3
T&L	L1 L5 L15 L10 L6 T1 T2 T3 L7 L11 L8 L9	L2 L4 L16 L3	T6 T5	L12 L14 L13	T7

⊕ Voltage Line

Circuit Board Wiring View-Model R-5310BⒶ

TR1

C	4.14V
B	1.14V
E	0.52V
Ie	0.79mA

TR2

C	4.3V
B	1.01V
E	0.34V
Ie	1.55mA

TR3

C	4.8V
B	1.2V
E	0.52V
Ie	1.33mA

TR4

	PLAY BACK	RECORDING
C	3.85V	3.42V
B	0.69V	0.55V
E	0.16V	0.01V
Ie	0.9mA	0.9mA

TR5

	PLAY BACK	RECORDING
C	3.06V	3.39V
B	0.65V	0.66V
E	0.02V	0.02V
Ie	1.8mA	1.8mA

TR6

C	PLAY BACK	RECORDING
C	5.35V	8.95V
B	0.76V	0.5V
E	0.11V	0 V
Ie	0.46mA	0.46mA

TR7

	RECORDING
C	6.35V
B	0.81V
E	0.36V
Ie	36mA

TR8

C	3.4V
B	0.65V
E	0.06V
Ie	0.4mA

TR9

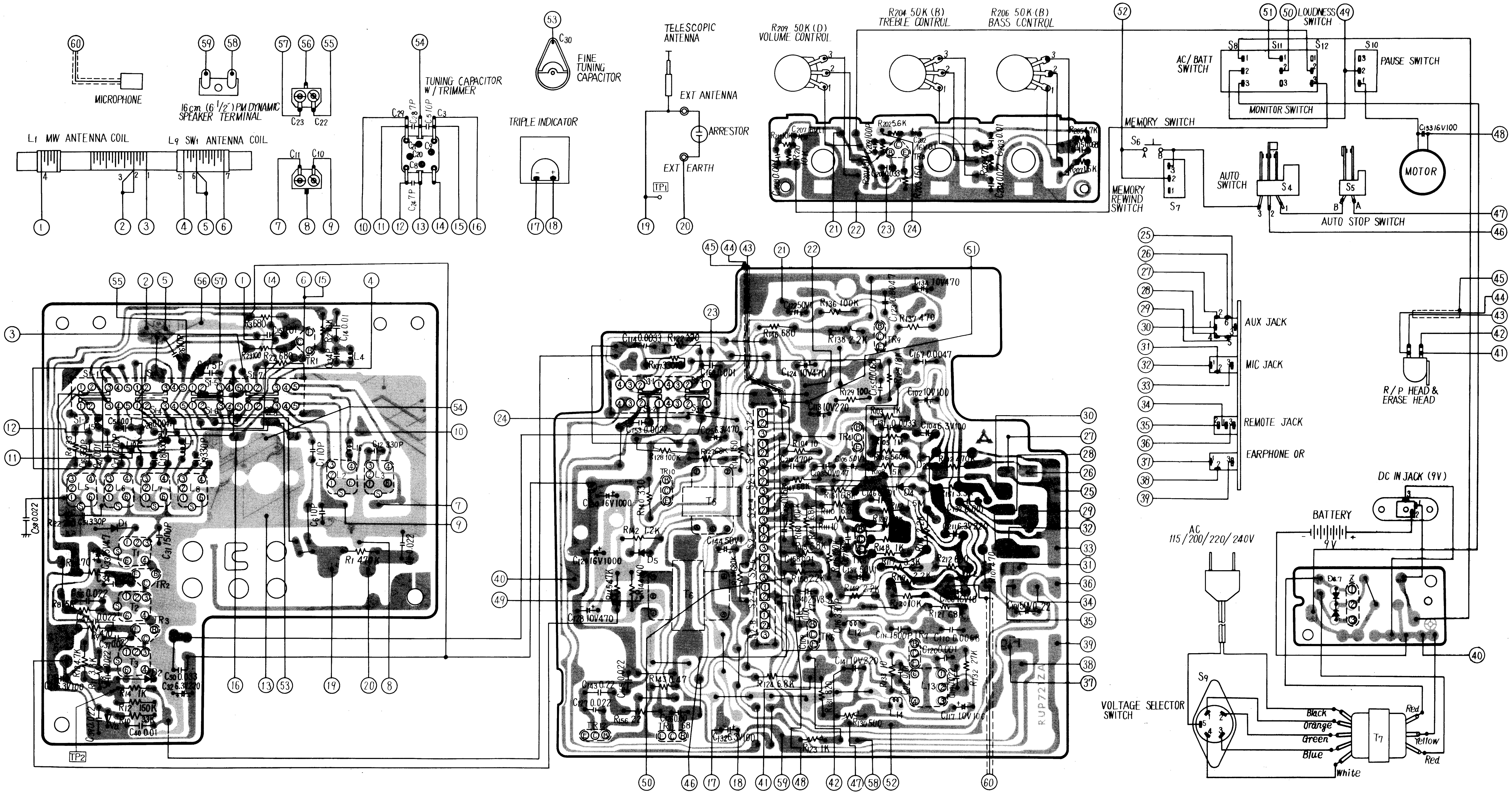
C	2.23V
B	1.1V
E	0.48V
Ie	1.2mA

TR10

C	6.59V
B	2.23V
E	1.57V
Ie	3mA

TR11,12

C	9 V
B	0.66V
E	0.02V
Ie	19mA



TR&D	D1 D2 TR2 TR3 TR1 TR12 D5 TR10 TR11 TR6 TR4 TR5 TR8 TR9 D4 TR7 D3
T&L	L1 L5 L15 L10 L6 T1 T2 T3 L7 L11 L8 L9 L2 L4 L16 L3 T6 T5 L12 L14 L13 T7

⊕ Voltage Line

■ CABINET PARTS LOCATIONS

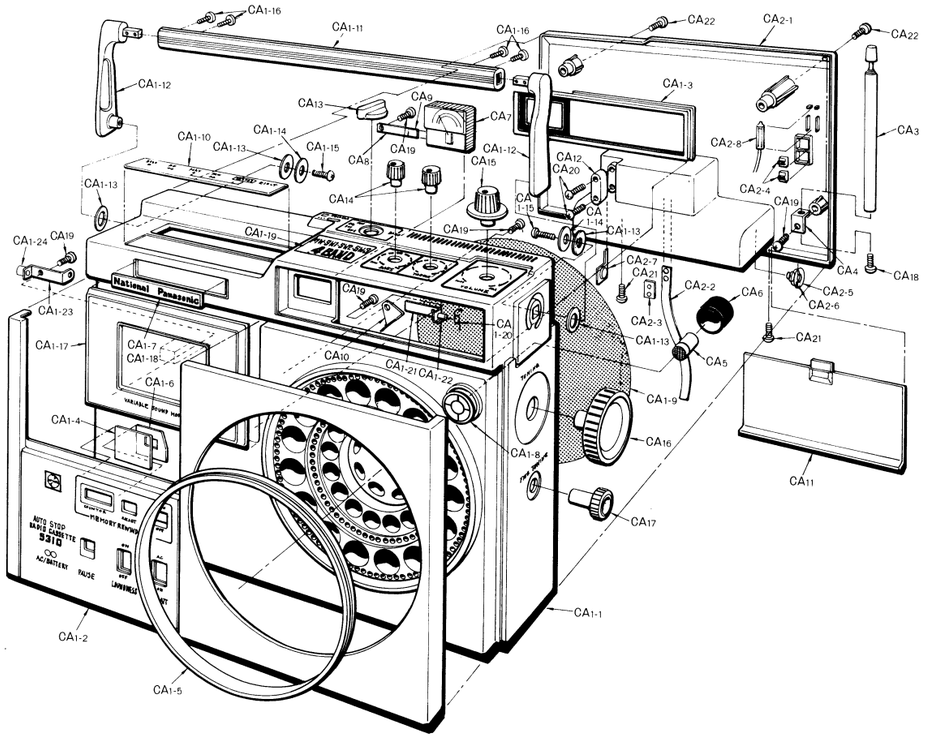


Fig. 10

■ CHASSIS PARTS LOCATIONS

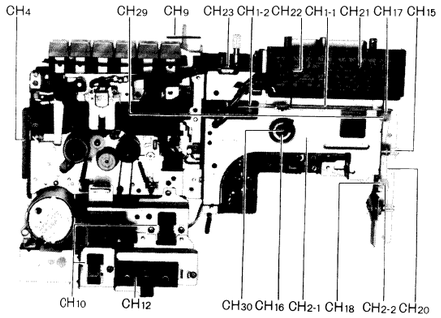


Fig. 11

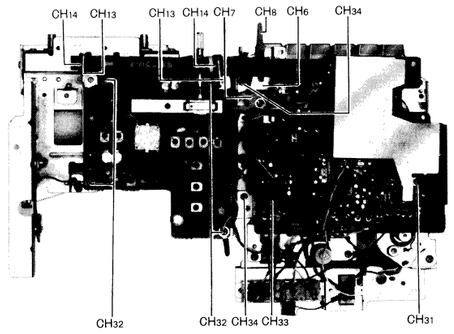


Fig. 12

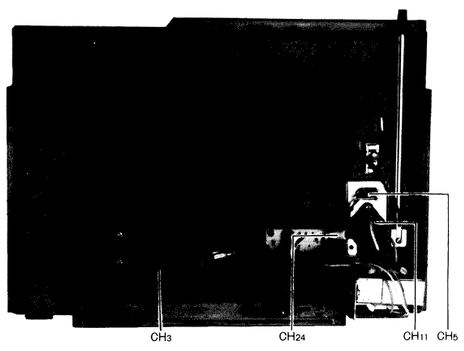


Fig. 13

■ MECHANISM PARTS LOCATIONS-TAPE DECK

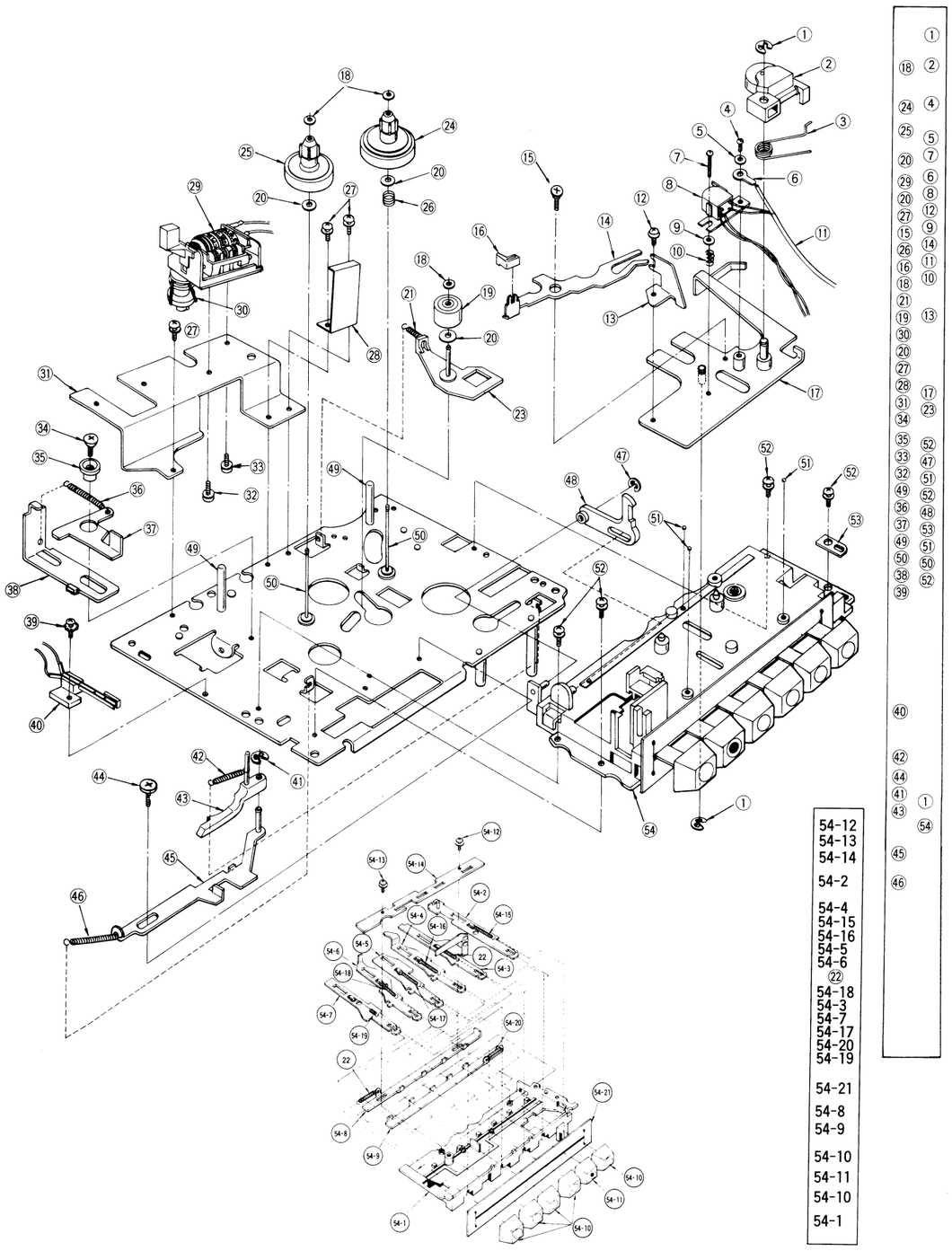


Fig. 14 (Face Viow)

CABINET PARTS LOCATIONS

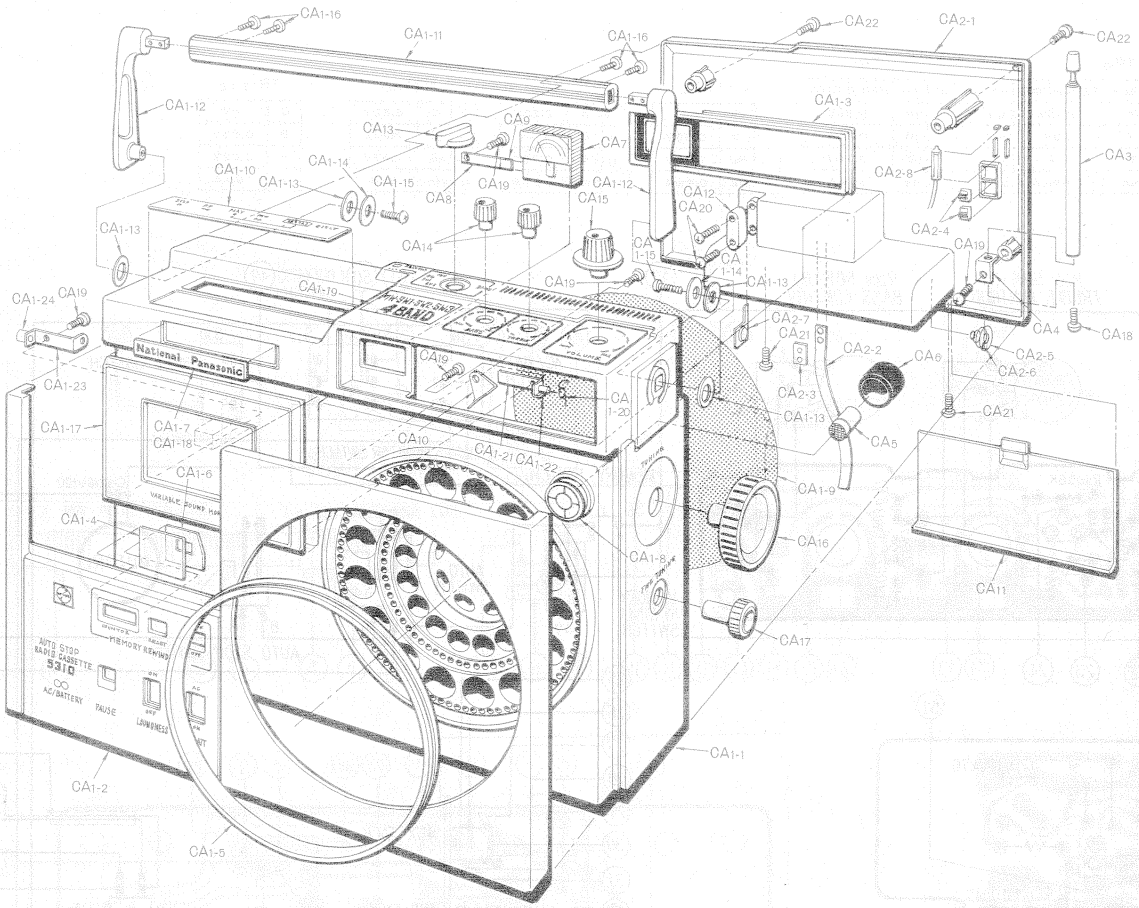


Fig. 10

CHASSIS PARTS LOCATIONS

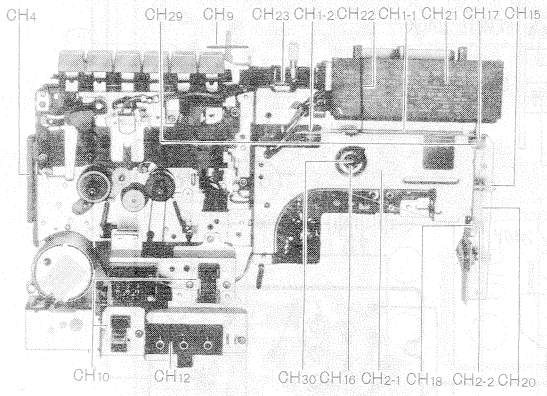


Fig. 11

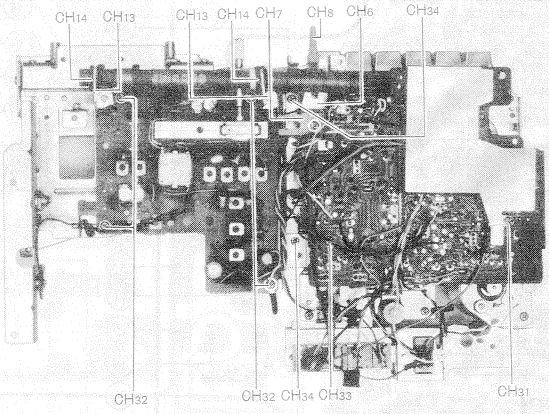


Fig. 12

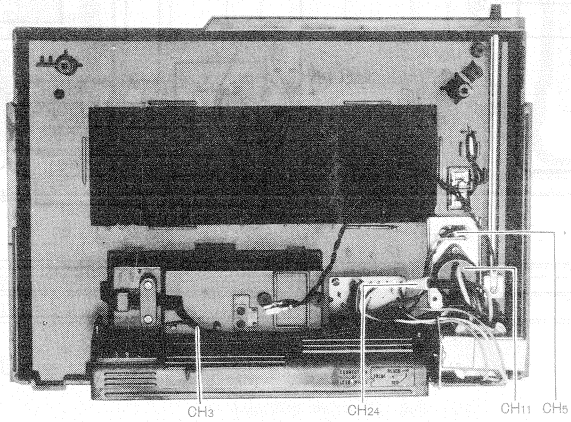


Fig. 13

■ MECHANISM PARTS LOCATIONS-TAPE DECK

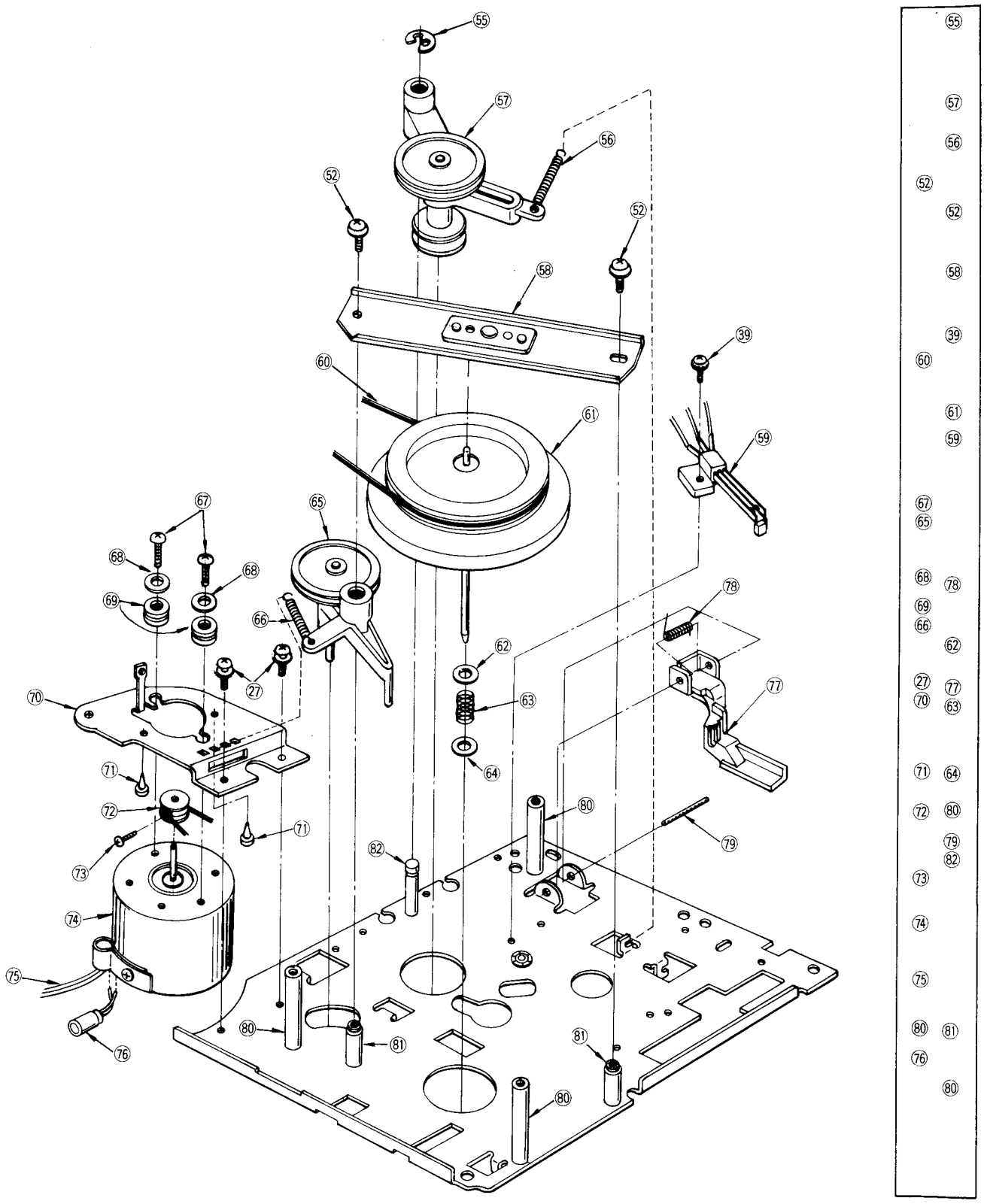


Fig. 15 (Rear View)

■REPLACEMENT PARTS LIST·····Model R-5310B (RD7603-1294)

NOTES: 1.Part numbers are indicated on most mechanical parts.
Please use this part number for parts orders.
2.X–Z rank: X rank parts will cover 80% of repair needs.
X+Y rank parts will cover 95% of repair needs.
Z rank parts are less necessary.
3. SAFETY Indicates that only parts specified by the manufacturer be used for replacement in critical circuits.
4.Part numbers shown in bold letters are service standard parts and may differ from Projuction parts.
5.The ○ mark is used by the manufacturing plant only.

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
TRANSISTORS AND DIODES					
TR1,2,3	2SC829	Transistor(Si), Converter, 1st IF Amplifier, 2nd IF Amplifier	3		X
TR4,5,8	2SC900	Transistor(Si), Pre Amplifier	3		X
TR6,7	2SC828	Transistor(Si), Meter Amplifier, Bias Oscillator	2		X
TR9,10	2SC945	Transistor(Si), AF Amplifier	2		X
TR11,12	2SC1568	Transistor(Si), Power Amplifier	2		X
D1,2,3,4	OA90	Diode(Ge), D.AGC, Detector & AGC, REC AGC	4		X
D5	RVDVD1150M	Diode(Si), Operation Compensator	1		X
D6,7	RVD10D1	Rectifier	2		X SAFETY
VARIATITES					
Va1,2	EYV320D1R2J2	Variatite, Operation Compensator	2		X
COILS AND TRANSFORMERS					
L1,9	RLF5F72-O	Antenna Coil, MW-SW1	1		X
L2	RLA3M5	Antenna Coil, SW2	1		X
L3	RLA3M6	Antenna Coil, SW3	1		X
L4,15	RLQY75S5	Choke Coil	2		Y
L5	RLO2M6	Oscillator Coil, MW	1		X
L6	RLO3M6	Oscillator Coil, SW1	1		X
L7	RLO3M7	Oscillator Coil, SW2	1		X
L8	RLO3M8	Oscillator Coil, SW3	1		X
L10	RLQY10G5	Choke Coil	1		Y
L11	RLQY15S5	Choke Coil	1		Y
L12	RLQZ1231-Z	Choke Coil	1		Y
L13	RLO9C12	Oscillator Coil, Bias	1		X
L14	RLQZ102-1-Q	Choke Coil	1		Y
L16	RLQY50S5	Choke Coil	1		Y
T1	RLI2M203	IFT, 1st	1		X
T2	RLI2M205	IFT, 2nd	1		X
T3	RLI2M402	IFT, 3rd	1		X
T5	RLT3F33-W	Input Transformer, P=1.4KΩ:S=1.4KΩ	1		X
T6	RLT2H28-V	Output Transformer, P=45Ω:S=8Ω	1		X
T7	RLT5K86-W	Power Transformer	1		X SAFETY
VARIABLE RESISTORS					
R204,206	EVHW0AF15B54	Variable Resistor, 50KΩ(B), Bass & Treble Control	2		X
R209	EVHW0AF15D54	Variable Resistor, 50KΩ(D), Volume Control	1		X
R123	EVLTOAA00B13	Semi-Fixed Variable Resistor, 1KΩ(B)	1		X
R130	EVLTOAA00B52	Semi-Fixed Variable Resistor, 500Ω(B)	1		X
R128	EVLS3AA00B15	Semi-Fixed Variable Resistor, 100KΩ(B)	1		X
VARIABLE CAPACITORS					
C3,29	PVC2K20T1	Tuning Capacitor, W/Trimmer Capacitor(C8,9,20,21)	1		X
C30	ECV1YW02D70A	Fine Tuning Capacitor	1		X
C10,11,22,23	RCV2T-16M	Trimmer Capacitor	2		X
COMPONENT COMBINATION					
Z1	RXAF103P22HD	Component Combination, 0.01μF×2	1		X SAFETY
SPEAKER					
SP	RAS16P08	Speaker, Imp.8Ω	1		X
SWITCHES					
S1-1~S1-8	RSR87ZK-A	Switch, Band Selector	1		X
S2-1~S2-8	RSH65Z-F	Switch, Tape Selector	1		X
S3-1~S3-4	RSS103Y-M	Switch, Radio-Sleep-Tape Selector	1		X
S7	RST41Z-H	Switch, Memory ON-OFF	1		X
S8,11,12	RST42ZS-P	Switch, AC/BATT, Monitor & Loudness	1		X
S9	RSR29-3	Switch, Voltage Selector	1		X SAFETY
S10	RST67Z-H	Switch, Pause	1		X
RESISTORS					
R104,111,116	**ERD25TJ100**	10Ω, 2/5Watt, ±5%, Carbon	4		Z
R23,129,144	**ERD25TJ101**	100Ω, 2/5Watt, ±5%, Carbon	3		Z
R141	**ERD25TJ151**	150Ω, 2/5Watt, ±5%, Carbon	1		Z
R140	**ERD25TJ331**	330Ω, 2/5Watt, ±5%, Carbon	1		Z
R7,9,101,137	**ERD25TJ471**	470Ω, 2/5Watt, ±5%, Carbon	4		Z
R3,146,212	**ERD25TJ681**	680Ω, 2/5Watt, ±5%, Carbon	3		Z
R131	**ERD25TJ821**	820Ω, 2/5Watt, ±5%, Carbon	1		Z
R14,103,148	**ERD25TJ102**	1KΩ, 2/5Watt, ±5%, Carbon	3		Z

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R142	**ERD25TJ122**	1.2KΩ, ⅖Watt, ±5%, Carbon	1	Z
R109,113,138 149,150	**ERD25TJ222**	2.2KΩ, ⅖Watt, ±5%, Carbon	5	Z
R10,11,117, 151	**ERD25TJ332**	3.3KΩ, ⅖Watt, ±5%, Carbon	4	Z
R110,114,115 121,124,161	**ERD25TJ682**	6.8KΩ, ⅖Watt, ±5%, Carbon	6	Z
R2,120	**ERD25TJ103**	10KΩ, ⅖Watt, ±5%, Carbon	2	Z
R108	**ERD25TJ153**	15KΩ, ⅖Watt, ±5%, Carbon	1	Z
R125	**ERD25TJ183**	18KΩ, ⅖Watt, ±5%, Carbon	1	Z
R119	**ERD25TJ223**	22KΩ, ⅖Watt, ±5%, Carbon	1	Z
R132	**ERD25TJ273**	27KΩ, ⅖Watt, ±5%, Carbon	1	Z
R145	**ERD25TJ473**	47KΩ, ⅖Watt, ±5%, Carbon	1	Z
R127,147	**ERD25TJ683**	68KΩ, ⅖Watt, ±5%, Carbon	2	Z
R118,136,160	**ERD25TJ104**	100KΩ, ⅖Watt, ±5%, Carbon	3	Z
R122	**ERD25TJ274**	270KΩ, ⅖Watt, ±5%, Carbon	1	Z
R107	**ERD25TJ334**	330KΩ, ⅖Watt, ±5%, Carbon	1	Z
R1,102	**ERD25TJ474**	470KΩ, ⅖Watt, ±5%, Carbon	2	Z
R106	**ERD25TJ564**	560KΩ, ⅖Watt, ±5%, Carbon	1	Z
R139	**ERD25TJ684**	680KΩ, ⅖Watt, ±5%, Carbon	1	Z
R105	**ERD25TJ105**	1MΩ, ⅖Watt, ±5%, Carbon	1	Z
R112	**ERD25TJ155**	1.5MΩ, ⅖Watt, ±5%, Carbon	1	Z
R4	**ERD25TJ330**	33Ω, ⅖Watt, ±5%, Carbon	1	Z
R20	**ERD25TJ221**	210Ω, ⅖Watt, ±5%, Carbon	1	Z
R8	**ERD25TJ152**	1.5KΩ, ⅖Watt, ±5%, Carbon	1	Z
R13	**ERD25TJ472**	4.7KΩ, ⅖Watt, ±5%, Carbon	1	Z
R12	**ERD25TJ154**	150KΩ, ⅖Watt, ±5%, Carbon	1	Z
R203	**ERD25TJ151**	150Ω, ⅖Watt, ±5%, Carbon	1	Z
R207	**ERD25TJ152**	1.5KΩ, ⅖Watt, ±5%, Carbon	1	Z
R205,208	**ERD25TJ472**	4.7KΩ, ⅖Watt, ±5%, Carbon	2	Z
R202	**ERD25TJ562**	5.6KΩ, ⅖Watt, ±5%, Carbon	1	Z
R210,211	**ERD25TJ103**	10KΩ, ⅖Watt, ±5%, Carbon	2	Z
R201	**ERD25TJ155**	1.5MΩ, ⅖Watt, ±5%, Carbon	1	Z
R156	**ERD25TJ220**	22Ω, ⅖Watt, ±5%, Carbon	1	Z
R22	**ERD25TJ681**	680Ω, ⅖Watt, ±5%, Carbon	1	Z
R143	ERX1ANJR47	0.47Ω, 1Watt, ±5%, Metal Oxide	1	Z

CAPACITORS

C13	ECCD1H040C	4PF, 50WV, ±0.25PF, Ceramic	1	X
C27	ECCD1H050CC	5PF, 50WV, ±0.25PF, Ceramic	1	X
C24,25	ECCD1H070CC	7PF, 50WV, ±0.25PF, Ceramic	2	X
C1,5,6,26	ECCD1H100KC	10PF, 50WV, ±10%, Ceramic	4	X
C107,209	ECCD1H101K	100PF, 50WV, ±10%, Ceramic	2	X
C2,36,39	ECKE1H223PF	0.022μF, 50WV, $\pm^{100}_{0}$%, Ceramic	3	X
C50	ECKE1H333PF	0.033μF, 50WV, $\pm^{100}_{0}$%, Ceramic	1	X
C210	ECKD1H471MD	470PF, 50WV, ±20%, Ceramic	1	X
C139,160	ECKD1H102MD	0.001μF, 50WV, ±20%, Ceramic	2	X
C153	ECKE1H222MD	0.0022μF, 50WV, ±20%, Ceramic	2	X
C114,131	ECKE1H332MD	0.0033μF, 50WV, ±20%, Ceramic	2	X
C28,109,123 167	ECKE1H472MD	0.0047μF, 50WV, ±20%, Ceramic	4	X
C110,126,155	ECKE1H682MD	0.0068μF, 50WV, ±20%, Ceramic	3	X
C108	ECKE1H153MD	0.015μF, 50WV, ±20%, Ceramic	1	X

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C127,165	ECKE1H223MD	0.022μF, 50WV, ±20%, Ceramic	2	X
C14,15,40,42, 54,146,158	ECKE1H103MD	0.01μF, 50WV, ±20%, Ceramic	7	X
C34,37,47	ECKD1H223MD	0.022μF, 50WV, ±20%, Ceramic	3	X
C58	ECKD1H223MD-Y	0.022μF, 50WV, ±20%, Ceramic	1	X
C12,19,51, 116	ECQS1331JZ	330PF, 125WV, ±5%, Styrol	4	X
C16	ECQS1361JZ	360PF, 125WV, ±5%, Styrol	1	X
C17	ECQS05122KZ	1200PF, 50WV, ±10%, Styrol	1	X
C31	ECQS05152KZ	1500PF, 50WV, ±10%, Styrol	1	X
C111	ECQS05152JZ	1500PF, 50WV, ±5%, Styrol	1	X
C18	ECQS05332KZ	3300PF, 50WV, ±10%, Styrol	1	X
C208	ECQG05102MZ	0.001μF, 50WV, ±10%, Polyester	1	X
C120,203	ECQG05103MZ	0.01μF, 50WV, ±10%, Polyester	2	X
C38,119,204	ECQG05223MZ	0.022μF, 50WV, ±10%, Polyester	3	X
C201	ECQG05333MZ	0.033μF, 50WV, ±10%, Polyester	1	X
C205	ECQG05683MZ	0.068μF, 50WV, ±10%, Polyester	1	X
C143	ECQG05224MZ	0.22μF, 50WV, ±10%, Polyester	1	X
C112	ECQG05103KZ	0.01μF, 50WV, ±10%, Polyester	1	X
C202,207	ECAG16ER1-Y	0.1μF, 16WV, Electrolytic	2	Y
C41,104,132 102,117	**ECEA10V100**	100μF, 10WV, Electrolytic	5	Y
C32,211	**ECEA6V220**	220μF, 6.3WV, Electrolytic	2	Y
C125	**ECEA6V470**	470μF, 6.3WV, Electrolytic	1	Y
C113,141	**ECEA16V220**	220μF, 16WV, Electrolytic	2	Y
C124,128,134	**ECEA16V470**	470μF, 16WV, Electrolytic	3	Y
C106	**ECEA16V10**	10μF, 16WV, Electrolytic	1	Y
C129,130	**ECEA16V1000**	1000μF, 16WV, Electrolytic	2	Y
C140	**ECEA50V3R3**	3.3μF, 50WV, Electrolytic	1	Y
C33	**ECEA35V4R7**	4.7μF, 35WV, Electrolytic	1	Y
C105,122,137 144	**ECEA50V1**	1μF, 50WV, Electrolytic	4	Y
C101	**ECEA50VR22**	0.22μF, 50WV, Electrolytic	1	Y
C103	**ECEA50VR47**	0.47μF, 50WV, Electrolytic	1	Y

CABINET

	→RYMR5310BX	Cabinet Body Assembly	1	X
CA1-1		Cabinet Body Only	(1)	
CA1-2		Escutcheon	(1)	
CA1-3		Panel, Dial	(1)	
CA1-4		Panel, Counter	(1)	
CA1-5	Not Available, Order	Ornament, Speaker	(1)	
CA1-6		Cover, Reset Switch	(1)	
CA1-7	RYMR5310BX	Badge, National Panasonic Mark	(1)	
CA1-8		Ornament, MIC	(1)	
CA1-9		Baffle	(1)	
CA1-10		Indicating Plate, Cabinet Upper Side	(1)	
CA1-11	RKX101Z	Handle, Cabinet	1	Y
CA1-12	RKX100YS	Arm, Handle	2	Y
CA1-13	RNW823	Washer(Nylon), Handle Arm M'tg	4	Z

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
CA1-14	XWG3F10	Washer(Metal), Handle Arm M'tg	2		Z
CA1-15	XYN3+C8S	Screw, Handle Arm M'tg	2		Z
CA1-16	XSB3+6BCS	Screw, Handle M'tg	4		Z
CA1-17	RKE9017Y	Cover with Indicating Plate, Cassette Box	1		Y
CA1-18	RHP567B	Sheet, Tape	1		Z
CA1-19	RGX648Z	Indicating Plate, 4 BAND Mark	1		Z
CA1-20	RUS181Z	Spring, Cassette Box	1		Y
.	RXE3R5310BX	Bracket Assembly, Cassette Box (Right)	1		Z
CA1-21	Not Available, Order RXE3R5310BX	Bracket Only	(1)		
CA1-22		Shaft, Bracket	(1)		
	→RXE4R5310BX	Bracket Assembly, Cassette Box (Left)	1		Z
CA1-23	Not Available, Order RXE4R5310BX	Bracket Only	(1)		
CA1-24		Shaft, Bracket	(1)		
	→RYFR5310BXD	Cabinet Back Cover Assembly	1		○X
CA2-1	Not Available, Order RYFR5310BXD	Cabinet Back Cover Only	(1)		
CA2-2		Tape, Battery	(1)		
CA2-3		Stopper, Tape	(1)		
CA2-4	RJS71Z	Terminal, EXT.ANT & EARTH	2		Z
CA2-5	RJC505Z	Spring, Battery ⊖ Side	2		Z
CA2-6	RJT398A	Connecting Pipe, Terminal	2		Z
CA2-7	RJC111A	Terminal, Battery ⊕ Side	2		Z
CA2-8	XAN5T25	Neon Lamp, Arrestor	1		X
CA3	**XEARV154HBSY**	Telescopic Antenna 10l1.5mm	1		X
CA4	RMA54A	Bracket(Metal), Telescopic Antenna	1		Z
CA5	RJM121Y	Microphone	1		X
CA6	RHG416Z	Rubber Cover, Microphone	1		Z
CA7	RSM2607Y-K	Meter, TUNING/REC LEVEL/BATTERY Indicator	1		X
CA8	RMM17Z	Bracket, Meter M'tg	1		Z
CA9	RHG914-1	Rubber, Meter Bracket	1		Z
CA10	RMS5B	Bracket, Speaker	4		Z
CA11	RKK9004Z	Cover, Battery	1		X
CA12	RHR550A	Bracket(Plastic), AC Cord	1		Z
CA13	RBS83ZK	Knob, Band Selector	1		X
CA14	RBN283Y	Knob, Bass & Treble Control	2		X
CA15	RBN284Y	Knob, Volume Control	1		X
CA16	RBN250ZK	Knob, Tuning	1		X
CA17	RBN285ZK	Knob, Fine Tuning	1		X
CA18	XYN3+C6S	Screw, Telescopic Antenna M'tg	1		Z
CA19	XTN3+10B	Screw, Bracket, Telescopic Antenna, Speaker & Meter M'tg	6		Z
CA20	XTN3+16B	Screw, AC Cord Bracket(Plastic) M'tg	2		Z
CA21	XTB3+12BFN	Screw, Cabinet Cover M'tg	2		Z
CA22	XSB3+16BNS	Screw, Cabinet Cover M'tg	2		Z

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
		CHASSIS			
	RXE1R5310BX	Pointer Guide Assembly	1		Z
CH1-1	Not Available, Order RXE1R5310BX	Guide Only	(1)		
CH1-2		Shaft, Pulley	(3)		
	RXE2R5310BX	Chassis Assembly	1		Z
CH2-1	Not Available, Order RXE2R5310BX	Chassis Only	(1)		
CH2-2		Shaft, Pulley	(1)		
CH3	RJA52	AC Cord, Power Source	1		Y
CH4	RJJ78Z-C	Jack, AUX, MIC, REMOTE & Earphone	1		Y
CH5	RJJ104Z-C	Jack, DC IN	1		Y
CH6	RUB80ZS	Lever(Aluminum), Selector Switch	1		Z
CH7	RUB81Z	Lever(Bakelite), Selector Switch	1		Z
CH8	RUB9010Y	Lever, Selector Switch	1		Z
CH9	RUV323Y	Cover, Selector Switch	1		Z
	RUB129Z	Lever, Recording Switch	1		Z
CH10	RUV283A	Cover, Pause & Memory Switch	2		Z
CH11	RUV184Z	Cover, Voltage Selector Switch	1		Z
CH12	RUV330Z	Cover, Loudness, Monitor & AC/BATT. Switch	1		Z
CH13	RMA118Y	Bracket, Core Antenna	2		Z
CH14	RHG109	Rubber, Core Antenna	2		Z
	RMY22	Heat Sink, Transistor	1		Z
CH15	RDT1164ZK	Tuning Shaft	1		Y
CH16	RDD410Y	Drum, Dial	1		Y
CH17	RDR20-3	Pulley, Dial	1		Z
CH18	RDR21-1	Pulley, Dial	3		Z
CH19(Fig.6)	RDS4060A	Spring, Dial	1		Y
CH20	RDZ05A	Cord(500m), Dial	1Roll		Y
CH21	RKD299Z	Scale, Dial	1		Z
CH22	RDP124ZA	Pointer, Dial	1		Y
	RHG5A	Rubber, Tuning Capacitor	1		Z
CH23	RHR700Z	Bracket(Bakelite), Band Selector	1		Z
CH24	RHR103A	Lead Cap, AC Cord	1		Z
CH25(Fig.2)	XTN3+10BR	Red Screw, Chassis M'tg	5		Z
CH26(Fig.2)	XTN3+16BR	Red Screw, Chassis M'tg	1		Z
CH27(Fig.2)	XTW3+8ER	Red Screw, Chassis M'tg	1		Z
CH28(Fig.2)	XYN3+C8RS	Red Screw, Chassis M'tg	1		Z
CH29	RNW150-2	Washer(Nylon), Pulley	4		Z
CH30	XYN26+C6	Screw, Tuning Capacitor & Drum M'tg	3		Z
	XNS8	Nut, Tuning Shaft M'tg	1		Z
	XWV8	Washer, Tuning & Fine Tuning Shaft M'tg	2		Z
	RHE6010A	Washer, Selector Switch Lever M'tg	1		Z
	XYN3+F8S	Screw, Selector Switch Lever M'tg	1		Z
CH31	XSN3+6S	Screw, P.C Board M'tg	2		Z
CH32	XTW3+6L	Screw, P.C Board M'tg	5		Z
CH33	XTN3+6F	Screw, P.C Board M'tg	1		Z
CH34	XTN3+8F	Screw, Chassis M'tg	2		Z

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
		ACCESSORIES			
A1	XEH1A1-P	Magnetic Earphone	1		Y
A2	RJN12Z	Cassette Tape	1		Y
A3	1JP44ME0300	EXT. Antenna Lead Assembly	1		Y
A4	1JP39-1MEG50	EXT. Earth Lead Assembly	1		Y
A5	RJP120ZS-H	Plug, Power Source	1		Y
		PACKING MATERIALS			
P1	RPP175Z	Polyethylene Cover	1		Z
	RPN9134Y	Pad Complete	1		Z
P2	Not Available, Order RPN9134Y	Pad, Right Side	(1)		
P3		Pad, Left Side	(1)		
P4	RPN2161Z	Pad, Left Side	1		○Z
P5	RPG1285Y	Packing Case	1		Z
P6	RQX5695X	Instruction Book	1		Y
		TAPE DECK			
	RU-3076-2A	Tape Deck Assembly	1		X
1	XUC3FK	E Ring, Pinch Roller & Head Plate M'tg	2		Z
2	QXL0664	Pinch Roller Assembly	1		Z
3	QBT1632-1	Spring, Pinch Roller	1		Y
4	XSN2-4	Screw, Head M'tg	1		Z
5	XWA2B	Washer, Head M'tg	1		Z
6	QJT0039	Lug Terminal, Head Lead	1		Z
7	QHQ1226	Screw, Head M'tg & Azimuth Adjusting	1		Z
8	WY034AZ	Head	1		X
9	XWG2BW	Washer, Head M'tg	1		Z
10	QBC1103A	Spring, Head	1		Z
11	QLSK2YBNC250	Lead Wire, Head	1		Z
12	XYN26+C4	Screw, Tape Guide M'tg	1		Z
13	QMA1814-1	Tape Guide	1		Z
14	QXL0969	Auto Stop Detecting Piece Lever Assembly	1		Z
15	QHQ1220	Screw, Auto Stop Lever M'tg	1		Z
16	QBJ1585	Piece, Auto Stop Detecting	1		Z
17	XKK0070A	Head Base Assembly	1		Z
18	QWQ1124	Washer, Idler & Reel Table M'tg	3		Z
19	QDP1467	Idler	1		Y
20	QWQT0005	Washer, Idler & Reel Table M'tg	3		Z
21	QBT1405M	Spring, Idler Lever Assembly, Recording Lever & Catch Lever	3		Y
22	QXL0734	Idler Lever Assembly	1		Z
23	QXP0411A	Supply Reel Table	1		Z
24	QXPK0028-1	Takeup Reel Table	1		Z
25	QBCT0005	Spring, Supply Reel Table	1		Y
26	XYN26+C6	Screw, Retainer, DC Motor Bracket & etc. M'tg	5		Z

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
27	QBP1657	Retainer, Cassette Pressure	1		Z
28(S6)	QDC0070	Tape Counter with Memory Switch	1		Z
29	QDB0201	Belt, Tape Counter	1		Z
30	QMF1711-1	Bracket, Tape Counter	1		Z
31	XYN3+C6	Screw, Tape Counter M'tg	1		Z
32	XYN3+C8	Screw, Tape Counter M'tg	1		Z
33	XSC26+8	Screw, Recording Lever M'tg	1		Z
34	QMB1086	Spacer, Recording Lever	1		Z
35	QBT1489M	Spring, Recording Lever	1		Y
36	QML2385	Lever, Recording(Small)	1		Z
37	QML2384-2	Lever, Recording(Large)	1		Z
38	XYN2+E5	Screw, Leaf Switch M'tg	2		Z
39(S5)	QSB0170A	Leaf Switch	1		X
40	XUC25FK	E Ring, Auto Stop Pawl M'tg	1		Z
41	QBT1807	Spring, Auto Stop Pawl	1		Y
42	QML2440-3	Pawl, Auto Stop(Plastic)	1		Z
43	QHQ1168	Screw, Auto Stop Lever M'tg	1		Z
44	QXL0661-1	Auto Stop Lever Assembly	1		Z
45	QBT1641	Spring, Auto Stop Lever	1		Y
46	XUC2FK	E Ring, Eject Lock Lever M'tg	1		Z
47	QBJK0099	Eject Lock Lever(Plastic)	1		Z
48	Not Available, Order RU-3076-2A	Shaft, Cassette Spacer	(2)		
49		Shaft, Reel Table	(2)		
50	QDK1012	Steel Ball, Head Plate & Flywheel	4		Z
51	XYN26+F6	Screw, Button Mechanism Assembly & etc. M'tg	6		Z
52	QMF1731	Fixing Plate	1		Z
53	→QXKK0075R	Button Mechanism Assembly	1		Z
53-1	QXKK0075R	Base, Button Mechanism & Head Plate	(1)		
53-2		Lever Assembly, Eject	(1)		
53-3		Lever Assembly, Recording	(1)		
53-4		Lever, Rewind	(1)		
53-5		Lever, Play Back	(1)		
53-6		Lever, Fast Forward	(1)		
53-7		Lever, Stop	(1)		
53-8		Lever, Catch	(1)		
53-9		Lever, Switch ON-OFF	(1)		
53-10		Button, Eject, Rewind, Play, Fast Forward & Stop	(5)		
53-11		Button, Recording	(1)		
53-12	XTC26+8R	Screw, Button Lever Stopper M'tg	1		Z
53-13	XTC26+10R	Screw, Button Lever Stopper M'tg	1		Z
53-14	QMF1637	Stopper, Button Lever	1		Z
53-15	QBT1475M	Spring, Eject Lever	1		Y
53-16	QBT1776	Spring, Rewind Lever	1		Y
53-17	QBT1634T	Spring, Play Lever	1		Y
53-18	QBTK0015M	Spring, Fast Forward Lever	1		Y
53-19	QBT1653	Spring, Stop Lever	1		Y
53-20	QBT1652-1	Spring, Catch Lever	1		Y
53-21	QBJ2208	Cover, Button	1		Z
54	XUC4FK	E Ring, Connection Pulley M'tg	1		Z
55	QBTK0013	Spring, Connection Pulley	1		Y

Ref. No.	Part No.	Part Name & Description	Per Set		Remarks
56	QXL0836A	Connection Pulley Assembly	1		Z
57	QXL0666Z	Bracket, Flywheel	1		Z
58(S4)	RSH90Z-H	Leaf Switch	1		X
59	QDBK0009	Belt, DC Motor	1		X
60	QXF0082	Flywheel with Capstan	1		Y
61	QBJ3311	Washer, Flywheel M'tg	1		Z
62	QBC1210	Spring, Flywheel Thrust	1		Y
63	QBJ3310	Washer, Flywheel M'tg	1		Z
64	QXL0659A	Play Back Connection Pulley Assembly	1		Z
65	QBTK0025	Spring, Play Back Connection Pulley	1		Y
66	XSN26+6	Screw, DC Motor M'tg	2		Z
67	XWG26B	Washer, DC Motor M'tg	2		Z
68	QXQ0068	Rubber, DC Motor	2		Z
69	QMAK0035	Bracket, DC Motor	1		Z
70	QBG1210	Rubber, DC Motor	2		Z
71	QDPK0018	Pulley, DC Motor	1		Z
72	XSN2+5	Screw, DC Motor Pulley M'tg	1		Z
73	MHI5R9CXPRB	DC Motor with Governor	1		X
74	QLGK0186	Lead Wire, DC Motor	1		Y
75	ECEA16V100L	Electrolytic Capacitor	1		Y
76	QBJK0101	Eject Lever(Plastic)	1		Z
77	QBT1633	Spring, Eject Lever	1		Y
78	QWQ1157	Shaft, Eject Lever	1		Z
79	Not Available, Order RU-3076-2A	Shaft, Tape Deck	(3)		
80		Shaft, Flywheel Support Lever	(2)		
81		Shaft, Connection Pulley	(1)		

■ ACCESSORIES & PACKING MATERIALS

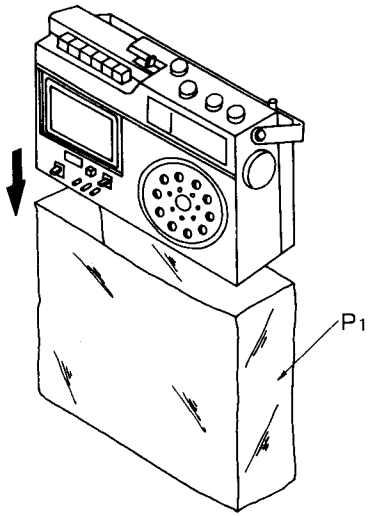


Fig. 16

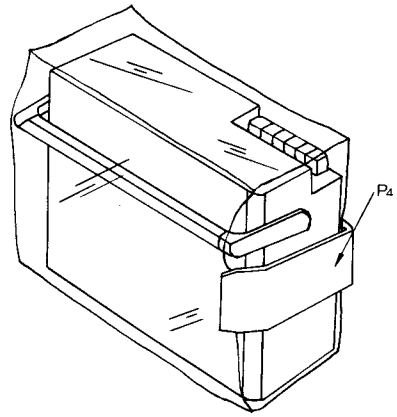


Fig. 17

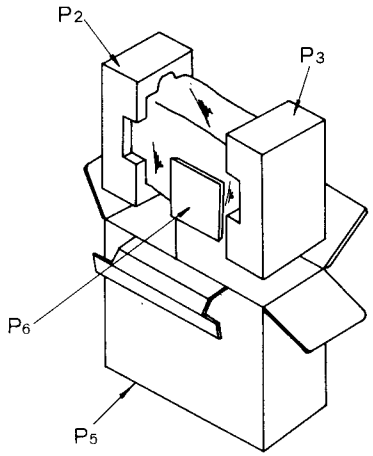


Fig. 18

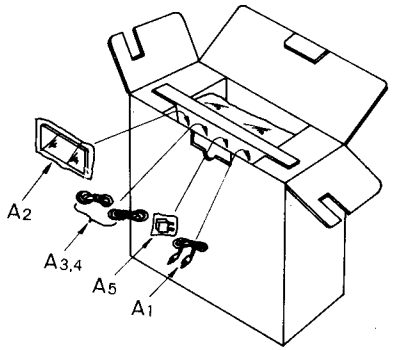


Fig. 19

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